

**Former Badger Army Ammunition Plant (BAAP)
Restoration Advisory Board Meeting
Sauk Prairie High School River Arts Center
January 19, 2023**

Time: 6:30 pm, January 19, 2023

Place: Conducted in-person at Sauk Prairie High School River Arts Center and virtually using Microsoft Teams

Attendees: Approximately 35 people attended the meeting, including 16 Restoration Advisory Board (RAB) Members and one media outlet. Attendees are included in the attachment.

Introduction: Mr. Matt Dayoc provided an introduction and plans for the evening.

Review and Approve the Operating Procedures (Matt Dayoc, US Army Environmental Command (USAEC))

- The RAB is working to refine the bylaws into current operating procedures for the RAB.
- RAB bylaw changes were made during the October RAB meeting and the changes were sent to the RAB in November for review.
- The RAB did not object to the draft Operating Procedures and voted in favor of formal adoption.
- The RAB formally voted to petition the Army for the Technical Assistance for Public Participation (TAPP) program in August. The TAPP program provides communities with independent technical assistance that contributes to the public's ability to provide advice to decision makers by improving the public's understanding of the conditions and related cleanup activities at a site.
- The Army reached out to several partners including the US Environmental Protection Agency (USEPA) but has struggled to find a third party to provide TAPP service.
- Joel Janssen recently contacted Professor Jim Tinjum from the University of Wisconsin at Madison, who, expressed interest in participating in the TAPP program. The Army will retain his services and requested the RAB ensure Mr. Tinjum will be agreeable to the RAB's preferences. The Army requested the RAB identify other potential TAPP consultants. Mr. Tinjum's background is available at: <https://energy.wisc.edu/about/energy-experts/james-tinjum>
- Mr. Tinjum will contract with the Army (a contract is not yet in place), and the Army will provide a consulting services scope of work to Mr. Tinjum. The RAB will work with Mr. Tinjum on specific questions, and he will help review documents and explain technical details to the RAB. The RAB can meet with him to seek input and honesty without the Army. If he has suggestions, the RAB can bring those forward.
- The Army will notify the community when Mr. Tinjum is under contract.

Review/Approve Minutes of Last Meeting

- Draft minutes from the previous RAB meeting (20 October) were sent to RAB members in November.
- A few clarifications were received. Final meeting minutes were sent out to RAB members on 17 December.

- There were no additional comments on the October meeting minutes.
- The RAB adopted the minutes as final.

Groundwater Sampling Update, Joel Janssen (Spec Pro Services)

- Initial semiannual groundwater sampling of monitoring wells for the Deterrent Burning Ground (DBG) Plume, Propellant Burning Ground (PBG) Plume and Nitrocellulose (NC) Plume was completed in September 2022.
- Quarterly sampling of Central Plume and DBG wells was conducted in November 2022.
- Semiannual sampling will repeat in April 2023.
- All the wells in the Central Plume down to the Water's Edge subdivision in Gruber's Grove Bay (GGB) will be sampled in June.
- Residential wells annual sampling will occur in August 2023. Two wells are sampled quarterly due to their relationship to plumes. One well lies in the DBG, and the second well in the Central Plume.

Deterrent Burning Ground Plume

- On-site, all six isomers of Dinitrotoluene (DNT) combined concentration decreased over the past 5 years.
- Off-site, all six isomers of DNT combined concentrations have increased over the past five years in the B and C well nests.
- No DNT was detected in monitoring wells ELN-1503A and 1503B during the November 2022 sampling event. These wells will continue to be sampled quarterly due to previous DNT detections, and to continue monitoring for changes in plume movement.

Propellant Burning Ground Plume

- DNT concentrations in the source area remain elevated, with the groundwater table dropping six feet from 2020 to 2022. All six isomers of DNT increased in monitoring well PBM-0001 from September 2021 to 2022. PBM-0001 currently has the highest DNT concentration in the PBG Plume area.
- Every monitoring well in the PBG is sampled for Volatile Organic Compounds (VOCs). Most monitoring wells are tested semiannually, and some wells are tested at a lesser frequency.
- VOCs continue to decrease within the PBG Plume.

Groundwater Monitoring Network Optimization (Mat Dayoc, USAEC)

- The Army proposes eight new monitoring well locations to monitor the PBG and DBG Plumes based on the results from the United States Geological Services (USGS) Trends Analysis Report and related team discussions with USGS. These additional monitoring wells will help eliminate uncertainty related to the plumes' current location.
- A Monitoring Network Optimization Plan was submitted to Wisconsin Department of Natural Resources (WDNR) for review on September 29, 2022. The plan was approved on October 27, 2022.
- WDNR suggested additional monitoring wells to further define the downgradient extent and Northwest extent of the Central Plume. After the new monitoring wells are installed in the PBG and DBG Plumes, the Army will move forward with addressing the uncertainty in the Central Plume.

- All proposed locations for monitoring wells are off-site. The Army has started working with landowners on access agreements and leases to install new wells on their property.

Proposed Monitoring Wells

- DBG Plume: proposed monitoring wells include two wells in one location near the distal end of the plume. The PBG plume has two nested locations (three wells at each location) proposed, one near the middle of the plume and one near the bottom of the plume.
- The Army is currently working on obtaining landowner permissions. Well installation is anticipated to occur in 2023.
- A RAB member commented the eastern margin of the DBG Plume is not clearly defined and DNT has been historically detected in a residential well sampled quarterly [along the eastern margin of the DBG Plume]. The RAB member also noted that private wells should not be used in lieu of monitoring wells, even if DNT is only detected in the residential well sporadically at low levels. Monitoring wells should be in place east of the plume.
- A RAB member commented that more current data is needed because concentrations may have changed in some areas and may be higher than previously recorded.

Gruber's Grover Bay Remedial Action Alternatives Evaluation (Matt Dayoc, USAEC)

- The Army awarded a contract to Architecture, Engineering, Construction, Operations, and Management (AECOM) in September 2022 to gather and evaluate historical data for Badger AAP for the last 25 years and identify the best action forward in finding a remedial action for GGB.
- The Army anticipates a Draft Desktop Supplemental Remedial Investigation to be complete by Spring [2023]. The expectation was to have the draft completed by end of the 2022 calendar year; however, historical data gathering has taken longer than projected.
- The Army will review the draft and work with the US Army Corps of Engineers (USACE) and AECOM to finalize the draft for WDNR submittal. WDNR had initial questions and concerns discussed in the December 2022 kick-off call with the Army. These concerns will be clarified in the draft document.
- The investigation goals are to understand the nature and extent of contamination, gain full understanding of risk, and identify the most appropriate remedial action. The Army will present a proposed plan for review/comment and seek public feedback before moving forward with a final decision.

USGS Support (Matt Dayoc, USAEC)

- The RAB expressed the desire to continue utilizing USGS services. The Army has retained their services moving forward and entered a two-year agreement with the USGS.
- USGS is finalizing the base contaminant transport model and will brief the RAB in the next meeting.
- A groundwater flow model report will be presented at the April 2023 RAB meeting and a transport model report presentation will take place at the July 2023 RAB meeting.
- The Army will utilize their services for a groundwater treatment pilot study to guide remedial design for selected remedial action.

Project Management Updates (Matt Dayoc, USAEC)

Proposed Plan (PP) for the Site-Wide Groundwater

- The PP is nearing completion and the Army received legal concurrence at the end of November from its legal staff. The Army and Spec Pro Services are working through final technical resolutions and anticipate submitting a draft final PP to WDNR within a month [end of February timeframe].
- The WDNR will review and comment on the PP. The Army will work to resolve any comments.
- Following WDNR's review, the Army will hold a public meeting and a 60-day public comment period to solicit written comments and feedback. This will be an opportunity for the public to review the document, ask questions, and to express concerns.
- The Army will prepare a decision document once there is a collective agreement on the selected remedy. The Army will sign the decision document identifying the selected remedy and authorize the implementation of such remedy.

2nd Five-Year Review (FYR)

- The second FYR kicked-off October 17, 2022, and will be completed by July 2, 2023, by a third party not currently working on the site. The third-party contract was awarded to Dawson.
- A FYR critically evaluates all the remedial actions currently in place to determine if they remain protective. As part of the process, Dawson will interview the RAB Community Co-chair and they will look for other community members interested in being interviewed. Interested community members can provide their contact information to [Jessica Berg (jberg@dawsonohana.com)], Dwight Hollon (dwight.m.hollon.civ@army.mil), Nguyen [quang.d.nguyen15.civ@army.mil] at USAEC.

Community Involvement Plan (CIP)

- The CIP document ensures the Army meets the needs of the community and shares information with the appropriate entities and the public at large. The CIP documents the methods through which the Army communicates with the community. Methods such as social media, newspaper advertisements, and provide points of contact may be included.
- The Army will update the CIP in 2023 and currently seeks community input in development of the CIP. [Those interested in participating and being interviewed should contact Regan Hertzler (rhertzler@kinaole.com) or (757) 408-5429].

Key FY23 Contracting Actions

- There are contract efforts in place for the Settling Pond Expanded Site Inspection, the Site-Wide Groundwater Monitoring Plan, the PBG Plume Per- and poly-fluoroalkyl substances (PFAS) Remedial Investigation, and the repair of settled areas at Landfill #5.
- The Army hopes to have the Settling Pond Expanded Site Inspection contract awarded in the Spring of 2023. The inspection will include Final Creek, Settling Ponds 1 & 3, and Spoils Disposal Areas I, II, III, IV, & V.
- The Site-Wide Groundwater Monitoring Plan will be a comprehensive document for recurring groundwater monitoring at Badger AAP that includes sampled wells, sampling schedule, sampling frequency and analytes.
- The PBG has one sampling location exceeding new EPA screening levels for PFAS. The Army will move to a remedial investigation for that site. The Army is working on a contract action with the intent to award the contract in late FY23 (prior to September 2023).
- The lifetime health advisory for PFAS the Department of Defense (DoD) currently recognizes is 70 parts per trillion. At this level the Army has authority to act. The site at Badger AAP has approximately 19 parts per trillion. If the PFAS contamination was 70 parts per trillion or above, the Army would take immediate action to sample the drinking water wells and immediately provide bottled water. Currently, the levels at Badger AAP are far below the DoD lifetime health advisory level. The Army is going to take the next steps per DoD policy and ensure there is a full nature and extent investigation completed to capture the full picture of PFAS contamination currently present at Badger AAP.
- Some areas within Landfill #5 settled over time. The settling causes ponding which potentially leads to erosion and uncovering of landfill materials. The Army is working to provide Spec Pro Services a contract modification to execute repair of the settled areas soon.
- A RAB member commented that PFAS is a concern for nearby dairy farming because PFAS bioaccumulates and the threshold in milk is about one part per trillion.

Future Meetings

- RAB members had no objections to the following proposed future meeting dates:
 - April 20, 2023
 - July 20, 2023
 - October 19, 2023
 - January 18, 2024

Public Comments and Closing Remarks

- A RAB member invited individual RAB members to sign onto a resolution to call on the WDNR to expand environmental testing requirements for explosives and other contaminants at Badger AAP. The RAB member reviewed historical details, the resolution details, and encouraged members to voice collective support for improved testing. For additional details, RAB members can contact info@CSWAB.org.
- Mr. Dayoc explained that if there is no regulatory requirement [such as WDNR, EPA, DoD], then no authority to spend dollars on clean up actions exists.
- A RAB member commented that it is time to test for all six isomers of DNT in the soil.

- WDNR commented that if the resolution is signed and submitted to the WDNR, they are willing to listen and to coordinate with partners to have any conversations needed, to walk through the rationale and to determine what is possible within a legal framework and their authority.
- The Community Co-chair encouraged the RAB members to sign onto the resolution.
- A RAB member commented that increasingly less people are attending the RAB meetings, likely because what is said and requested is largely ignored.
- One member inquired about what political factors that might force the WDNR to adopt new standards.
- WDNR explained that typically, when standards are developed, WDNR has a standard-making team that investigates the science and works with WDHS and other partners to use science-based rationale to propose new standards. At that point, it goes through a natural resource board, up to the legislature and then back down for approvals. There are no politics behind the process. Within the current regulatory framework, WDNR can only suggest cleanup actions that fall under the codes that currently exist.
- The Community Co-chair encouraged members to call their state representatives if they feel passionate about issues at Badger AAP.
- A RAB member explained that the WDNR has existing authority to enforce site specific standards (versus enforceable standards), and this would not require state legislature to act. There are specific criteria when establishing cleanup goals for soil (such as risk to groundwater) and the RAB can request WDNR to impose remediation goals that are protective, particularly of groundwater and surface water.

QUESTIONS AND ANSWERS

Review and Approve the Operating Procedures (Matt Dayoc, USAEC)

- **Q:** Is the RAB subject to the Wisconsin “open meeting law”?
- **A:** No, it is a federal program that operates under CERCLA (Matt Dayoc, USAEC).
- **Q:** Are there any meeting notification procedures that must be followed?
- **A:** Yes, and the operating procedures establish notification criteria. In the operating procedures it states that the Army Co-chair is responsible for providing notice to each member not less than five days before the meeting of the RAB (Matt Dayoc, USAEC).
- **Q:** Do we need to establish a quorum at all?
- **A:** Yes, for any voting opportunities. At the last meeting the RAB discussed what it would like the quorum to be and agreed on 51% of the RAB which includes at least one member being present from the community at large, in addition to the Army Co-chair and Community Co-chair. This will apply to future meetings (Matt Dayoc, USAEC). The Army will provide finalized operating procedures to the RAB members.
- **Q:** Are public officials/state representatives notified of RAB meetings?
- **A:** Yes, they are on the mailing list and are notified. A congressional staffer was present at the meeting in October (Matt Dayoc, USAEC).
- **Q:** Could you add all of Sauk County Government to the RAB Meeting notification list?
- **A:** If there is a list of email addresses that you can provide, the Army will add them to the mailing list (Matt Dayoc, USAEC).

Groundwater Sampling Update, Joel Janssen (Spec Pro Services)

- **Q:** On the residential wells, those have been predetermined and you test the same wells every year?
- **A:** The Army has been working with the DNR on a particular sampling plan, but when new wells are installed in certain areas they are added to the plan. Each time the Water's Edge Subdivision gets a new well it is added to the sampling plan for that subdivision. The Weigand's Bay area wells are continually tested. This includes anyone that could be potentially impacted if the DBG Plume shifted further down. Each time the Water's Edge Subdivision (near the Central Plume) gets a new well it is added to the sampling plan for that subdivision. Wells in the Keller Road area of the PBG Plume and a select number of wells in the Windings are tested and down highway 78. In 2018/2019 all the wells were tested once and that helped to determine what the future program would be (Joel Janssen, Spec Pro Services).
- **Q:** Are any of the wells in the new subdivision near Ruthe Badger Lane south of Weigand's Bay going to be tested?
- **A:** No issues with volatiles or Dinitrotoluene (DNT) were detected from testing the wells north of that area. Testing those wells is not currently recommended. The DBG Plume has not moved that far to the south yet (Joel Janssen, Spec Pro Services).

Groundwater Monitoring Network Optimization (Mat Dayoc, USAEC)

- **Q:** Where does the groundwater under the settling ponds discharge to? Does it feed into the Central Plume or GGB?
- **A:** It does not impact the Central Plume. There were monitoring wells related to the settling ponds that were abandoned in 2016 because there were no detections of DNT or VOCs. The groundwater table near GGB is five ft deep at the most. The groundwater table by the settling ponds is about 40 ft. deep. If it is infiltrating through the sand at the bottom of Settling Pond 3, it will infiltrate directly to the water table straight down. It would then migrate with the flow. Based on past monitoring that has been done, the flow would be in a southerly direction (Joel Janssen, Spec Pro Services).
- **Q:** How long does it take to clean up one of these wells if there is a hit on a particular chemical?
- **A:** The answer to that would depend on answers to a couple of additional questions: is there a source area upgradient that may serve to consistently contaminate the well? Or does contamination lie near the plume edge and only occasionally serves as a contaminant source (meaning, water level/flow fluctuation only allows water to come in contact with small amounts of the contaminant and only occasionally)? Contaminant sources closer to the plume are more likely to be consistent. (Joel Janssen, Spec Pro Services).

Proposed Monitoring Wells

- **Q:** Will the Army be testing the wells [proposed monitoring wells] downgradient of the settling ponds for PFAS?
- **A:** Not currently. To address changes in promulgated levels for PFAS, the Army is contracting for a PFAS remedial investigation at the PBG this fiscal year. The Army will start with nature and extent of PFAS at the PBG specific to the one location identified in the site inspection (Matt Dayoc, USAEC).

- **Q:** What was detected in the last couple of sampling events at the residential well that is sampled quarterly in the DBG [indicated by the green dot on slide 11]? Have there been any DNT detections?
- **A:** It has been a long time since there was a detection [there were no detections of DNT] (Joel Janssen, Spec Pro Services).
- **Q:** Why hasn't the WDNR required the Army to test drinking water wells along County Z Road when they are in the middle of the PBG Plume and there are exceedances?
- **A:** If needed, the WDNR can coordinate with the Army to review the history and data and to discuss which private wells should be sampled (Isaac Ross, WDNR).
- **Q:** Has the new well at the Prairie du Sac dam been sampled?
- **A:** Yes, the newest well was tested in 2018. Nothing was detected so continued testing of the well was not recommended. (Joel Janssen, Spec Pro Services)
- **Q:** Could the current fluctuation in the water table have anything to do with the movement of the PBG Plume?
- **A:** The PBG Plume has been moving for decades, and the water table elevation is still much higher currently. The water table was more consistent about 10 years ago and was not fluctuating up as much as it has been recently [the plumes movement is not solely related to the change in the water table] (Joel Janssen, Spec Pro Services).
- **Q:** Do concentrations generally stay up rather than down [in the PBG Plume]?
- **A:** The PBG Plume has a lot of variability. For example, with carbon tetrachloride and Trichloroethylene (TCE), there have been some higher concentrations detected in wells further up plume and then they fade away. There is some migration vertically and horizontally down toward the river. There may be further contamination up gradient but there is also mixing potential with the river itself. The river has some impact with that basin (Joel Janssen, Spec Pro Services).
- **Q:** Do the contaminants tend to have weight?
- **A:** These chemicals [contaminants in the PBG Plume] tend to have a weight and they sink. They are not tending to float near the water table (Joel Janssen, Spec Pro Services).
- **Q:** Is the Army doing any new testing as part of this effort [Supplemental Remedial Investigation]?
- **A:** There are options within the contract to identify data gaps. If it is determined that there is a need for more information, there is a mechanism to gather additional data (Matt Dayoc, USAEC).
- **Q:** Do the homeowners at Water's Edge have any input to the WDNR or to the Army as to what will happen [with GGB]?
- **A:** Absolutely. Public participation is part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. Once the remedial investigation is complete, the RAB members will be briefed and discussions regarding the true risk will be held. Remediation alternatives will be determined and public input regarding the alternatives will be sought (Matt Dayoc, USAEC).
- **Q:** Do you see anything happening at GGB this year, or is this going to take a while?
- **A:** The only action that might happen this year is additional data gathering but no remedial action (Matt Dayoc, USAEC).

USGS Support (Matt Dayoc, USAEC)

- **Q:** Can USGS tell us how long it will be before this [contamination] goes away?

- **A:** The modeling will help to better understand how long it will take to complete cleanup (Matt Dayoc, USAEC).

Project Management Updates (Matt Dayoc, USAEC)

Proposed Plan (PP) for the Site-Wide Groundwater

- **Q:** What is the Army's legal office doing with the PP? Are they just wordsmithing?
- **A:** The Army's legal office will ensure that the Army has the legal authority and capability to implement this remedial action (Matt Dayoc, USAEC).
- **Q:** There are alternatives in the PP? So, there is not just one?
- **A:** The feasibility study outlined several alternatives; the PP is the one alternative that the Army is proposing (Matt Dayoc, USAEC).
- **Q:** Can the public comment period be extended to 60 days rather than 30 days? In particular to ensure that the RAB and the local government has time to have meetings.
- **A:** No problem, the Army can accommodate that request (Matt Dayoc, USAEC).
- **Q:** When will the Army's legal office have its review finished?
- **A:** The legal office approved it at the end of November 2022. It has been reviewed and approved from an Army legal perspective (Matt Dayoc, USAEC).

2nd Five-Year Review (FYR)

- **Q:** Are the FYR reports submitted to WDNR?
- **A:** Yes, they are submitted to WDNR (Matt Dayoc, USAEC).
- **Q:** Will the FYR look at any of the prospective work such as the settling pond work or the PFAS?
- **A:** No, FYRs are only completed once the remedial action has taken place. If something is still in the investigation phase it will not be looked at in the FYR. However, they may look at the settling ponds because some soil removal actions were completed there (Matt Dayoc, USAEC).

Key FY23 Contracting Actions

- **Q: Could you speak to what is included in the settling pond site inspection activities?**
- **A:** The goal of a site investigation is presence or absence of contamination. The settling ponds were previously investigated, and removal actions of soil were completed 10 years ago, and the site was closed in concert with WDNR. The fire brought to light that there is still residual contamination in place. The site inspection will look at the settling ponds and Final Creek to determine if contamination is present at levels that exceed a screening level. If contamination is present at levels that exceed a screening level, then the Army will move into a remedial investigation to determine nature and extent and any potential risk from present contamination (Matt Dayoc, USAEC).
- **Q:** The fire occurred at Settling Pond 2. Why is Settling Pond 2 not listed [as part of the site inspection]?
- **A:** The Army completed sampling at Settling Pond 2 and has previously established that there is contamination present. That will move forward to remedial investigation (Matt Dayoc, USAEC).
- **Q:** Do the current Army helicopter operations land at the Badger AAP property or do they stay above the ground?

- **A:** Inside the fenced area of the landfills, the helicopters have a concrete weight that they can pick up with some sort of attachment. They are practicing picking up that heavy concrete weight (Joel Janssen, USAEC).
- **Q:** Where did PFAS exceed the EPA standard [in the PBG Plume]?
- **A:** It is the well nest located on the road near the old magazine area [an ammunition storage location] (Joel Janssen, Spec Pro Services).

ATTENDEES

RAB Members Present

- | | | |
|-----|-------------------------|---|
| 1. | Matt Dayoc | Army Co-Chair |
| 2. | Charlie Wilhelm | At Large Member |
| 3. | Curtis Hedman | WDHS |
| 4. | Dennis Hancock | US Dairy Forage Center |
| 5. | John Ellington | City of Baraboo |
| 6. | Laura Olah | Citizens for Safe Water Around Badger (CSWAB) |
| 7. | Issac Ross | WDNR |
| 8. | Mary Jane Koch | At Large Member |
| 9. | Michele Hopp | Community Co-chair |
| 10. | Randy Poelma | Ho-Chunk Nation |
| 11. | Roger Heidenreich | Town of Merrimac |
| 12. | Valerie McAuliffe | Sauk County Board |
| 13. | William Stehling (Bill) | Sauk City |
| 14. | Doug Gjerston | Town of Sumpter |
| 15. | Robin Meier | Bluffview Sanitary District |
| 16. | Mike Gleason | Lake Wisconsin Alliance |

Media Outlet

- | | | |
|----|-----------|-----------|
| 1. | Joe Block | Star News |
|----|-----------|-----------|

Army and Army Contractors

- | | | |
|----|---------------|-------------------------------|
| 1. | Joel Janssen | SpecPro Professional Services |
| 2. | Kay Toye | Environmental Research Group |
| 3. | Dwight Hollon | USAEC |
| 4. | Quang Nguyen | USAEC |
| 5. | Ryan Tefft | USACE |
| 6. | Tat Ebihara | AECOM |

Visitors

- | | | |
|-----|------------------|-----------------------|
| 1. | Jeremiah Yee | RAB Alternate (DHS) |
| 2. | Wendy Carlson | RAB Alternate (CSWAB) |
| 3. | Mathew Pajeroski | USGS |
| 4. | Zhang Xiaochun | WDNR |
| 5. | Kate | Guest |
| 6. | Vernon | Guest |
| 7. | Mike Gleason | Guest |
| 8. | Stephanie | Town of Merrimac |
| 9. | Mark Frey | Guest |
| 10. | Wendy Carlson | RAB Alternate (CSWAB) |